

DEVELOPMENT OF NURSE LED EDUCATIONAL PACKAGE ON NEUROLOGICAL EXAMINATION AMONG NURSING STUDENTS

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ABSTRACT

Background

The nurse should perform the neurological examination to determine whether central nervous system dysfunction is present or not, to identify the functional deficit and how they impact on the individual ability to function in the activities of daily livings and other aspects of life, and to determine the human responses to actual or potential health problem precipitate by the dysfunction.

Aim

The aim of this article is to develop nurse led educational package on neurological examination for nursing students.

Materials and Methods

Development of this intervention involves three phases which are pre preparatory phase, development phase, pretesting phase. This intervention development is a part of large-scale study employed a tri-phase which aims to determine neurological examination skills among nursing students. The developed intervention was submitted to the experts in the field of nursing and medicine. The content validity ratio and content validity indexed was computed. Further, reliability was calculated. Pretesting was done to rule out the feasibility of the intervention.

Results

The computed content validity index and content validity ratio was found to be +1 respectively, which indicates that the developed NLEP is highly valid. The stability of the intervention was calculated by using Karl Pearson correlation coefficient its value was 0.75 which indicates the intervention is highly reliable.

Conclusion

Nurse-Led Educational Package (NLEP) can be as effective to improve on Knowledge, Self-efficacy and Skill regarding neurological Examination among nursing Students.

Keywords: Neurological Examination, Content Validity, Reliability, Nursing Students, Nurse Led Educational Package.

INTRODUCTION

The nervous system is a complex network of nerves and cells that carry messages to and from the brain and spinal cord to various parts of the body. It includes both the central nervous system and the peripheral nervous system. The central nervous system is made up of the brain and the spinal cord, and the peripheral nervous system is made up of the somatic and autonomic nervous system (Mondal, 2021). The nervous system helps the human body interact with the external environment and maintain the functions of all body organs internally (Bartolo et al., 2012).

Neurological examination is the assessment of the sensory neurons and motor responses, especially reflexes, to determine whether the nervous system is impaired. Neurological examination is not as similar as physical examination. It is a critical evaluation of the functioning of the nervous system thereby assessing the functioning of certain parts of the body which are operated through nervous system. Neurological examination provides us the critical report about function of Brain. . It can be used both as a screening tool and as an investigative tool. (Barde et al., 2021).

The nurse should perform the neurological examination to determine whether central nervous system dysfunction is present or not, to identify the functional deficit and how they impact on the individual ability to function in the activities of daily livings and other aspects of life, and to determine the human responses to actual or potential health problem precipitate by the dysfunction. The data collected creates a database for planning care that is patient centered. Advanced practice nurse may overlap with the physicians in the purpose of examination based on legal authority to practice in advanced practice role (Stanik-Hutt, 2013)

Teachings of different skill need various techniques and contemporary methods along with traditional lecture method. Nurse-Led Educational Package (NLEP) can be suitable substitution when we are not able to perform the demonstration method. Some studies have shown that Nurse-Led Educational Package (NLEP) method is effective than traditional teaching method (Slavich et al., 2012)

Development of Nurse Led Educational Package (NLEP)

The NLEP among nursing students was developed by the investigator based on the objectives, review of literature, discussion with the guide, and seeking opinions from experts.

The following were the sequential steps involved in the development of NLEP.

1. Pre preparatory phase:
 - Review of literature
2. Development phase:
 - Framing the outline of the NLEP.
 - Framing the outline of the contents.
 - Deciding the method of instruction and audio-visual aids
 - Development of criteria checklist for content validity
3. Pretesting phase:
 - Pretesting of NLEP
 - ❖ Validity
 - Illuminative validity
 - Face validity
 - Content validity
 - ❖ Reliability
 - Test-re-test method

1. Pre-preparatory phase:

- **Literature review:** Literature review gives a critical summary of the topic of interest (Groove and Burns, 2014). Before developing the NLEP the investigator reviewed existing literature in an area of interest. In relation to writing the draft, careful attention was given to ensure that the content was accurate and up to date. The sources of the information accessed for the development of NLEP are books, journals, articles, published and unpublished theses related to neurological examination among nursing students.

2. Development phase:

- **Framing the outline of the NLEP:** The outline of the NLEP was prepared by the investigator by outlining the details of the schedule of the intervention, specifying the group, time, teaching learning activity, and the duration for each activity. In contemporary times, up-to-date knowledge is required in health care setting. The ability of nurses to perform neurological examination is highly variable.

- **Framing the outline of the content of NLEP:** The content of each aspect of the NLEP was outlined in sessions. A total of 3 sessions were planned as follows.
 - ❖ General Examination
 - ❖ Mini Mental Status Examination
 - ❖ Cranial Nerve Assessment
 - ❖ Deep Tendon Reflex Assessment
- **Deciding the method of instruction and audio-visual aids:** In this various teaching modalities like lecture-cum-discussion, power point presentation with discussion brainstorming, interactive session, video clips, Animations and Handouts were used to impart knowledge and skill on neurological examination.
- **Development of criteria checklist for content Validity:**
The criteria checklist was prepared to validate the NLEP in terms of relevancy, selection of content, Language, feasibility, organization and presentation. The experts were asked to review the NLEP and rate using four-point scale i.e. Strongly Agree, Agree, Disagree, strongly disagree in the content evaluation form.

3. Pretesting phase:

The investigator attempted for individual try-out on a representative sample of 30 nursing students. The purpose of the pre-test is to determine the validity, reliability, clarity, presence of ambiguous content, time required and also to check the appropriateness, wording, information related to the topic and the content before implementation of the intervention.

Illuminative Validity of NLEP

Before doing content validity, illuminative evaluation was done. It is an approach to evaluation that seeks to illuminate the conditions of an educational programme mainly through a qualitative evaluation approach. (McCormick, 2005). Hence, the investigator presented the NLEP in front of Medical Surgical Nursing experts and Doctors and requested the experts to do illuminative evaluation. The comments are that to follow same font size for all slides of power point. The content should be simple, clear, legible and attractive. Suggested to give handouts of neurological examination. These critiques, suggestions and opinions were incorporated and modifications of NLEP were done before proceeding to content validity.

Face Validity

Face validity refers to whether the instrument looks like it is measuring the target construct (Polit & Beck, 2018). The face validity of NLEP is obtained by asking the 10 nursing students to rate the intervention in four-point rating scale i.e. Strongly Agree, Agree, Disagree, strongly disagree in terms of relevancy, selection of content, Language, feasibility, organization, and presentation. All the items of the NLEP were agreed by the nursing students.

Content validation of the NLEP

The NLEP was given to 4 nursing experts and 3 medical experts to validate the developed intervention. After the experts' suggestions content validity index and content validity ratio was determined. After Second Validation, I-CVI, S-CVI/UA, CVR were calculated, and all values found to be 1.

Reliability

The criteria checklist was given to the nursing students to rate the NLEP using four-point scale i.e. Strongly Agree, Agree, Disagree, strongly disagree. The reliability of the NLEP was calculated using criteria checklist. The test-re-test method was adopted that is twice the same checklist was administered with a gap of a week and correlation was calculated using Karl Pearson formula. The 'r' value was 0.75 and the NLEP was found reliable. Hence no modifications were made in the NLEP.

Nurse Led Educational Package

After completing all phases, the researcher constructed the NLEP, taking into account the comments given by various subject experts. The experts' recommendations included the modification of certain specific objectives, addition of meningeal irritation symptoms and the simplification of NLEP.

DISCUSSION

There is evidence that educational strategies such as supported participation Dornon et al (2007) can improve neurology education, a factor highlighted in a report from a medical student (Giles, 2010). Ridsdale et al. (2007) employed ongoing organizational change and support in their neuroscience teaching for medical students, emphasizing the importance of and response to curriculum feedback. Their report suggests a fundamental fact: evaluating clinical teaching and responding to that evaluation can at least partly address neurological examination. A framework of criteria adapted from (Guskey, 2000) levels will be useful in evaluating future interventions in neurology education including (i) organization and support, (ii) reaction, (iii) learning criteria, (iv) behavioural change and (v) change in clinical outcome (the ultimate goal of medical

education). Emerging studies with increasing framework attributes may better facilitate study comparisons and educational development.

CONCLUSION

Nurse-Led Educational Package is developed by following the sequential phases of pre preparatory phase, development phase, pretesting phase. Nurse-Led Educational Package (NLEP) can be as effective to improve on Knowledge, Self-efficacy and Skill regarding neurological Examination among nursing Students.

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